

REMARKS

The Examiner is thanked for the clearly stated action. This communication is filed in response to the Office Action having a mailing date of January 15, 2010, in which a three (3) month Shortened Statutory Period for Response has been set, due to expire April 15, 2010. No claims are currently amended and Claims 22 and 51-67 are pending, of which Claims 22 and 59 are independent claims. All of the pending claims are believed in condition for allowance.

In the Office Action, Claims 22 and 59 (among other claims) were rejected under 35 USC 102(b) as being anticipated by US Patent No. 5,600, 105, issued to Fukuzaki et al. Applicants respectfully traverse the rejection of these claims on this basis.

Referring to FIGURE 8 of the present application, Claims 22 and 59 are directed to a "surface and cordless transducer system" wherein the "surface" includes a "position resolving grid (18)" and a "power transmission coil (12), which is distinct from the position resolving grid (18), for radiating the electromagnetic field, **the power transmission coil being a resonant power transmission coil and consisting of a plurality of overlapping coils** (24)." (Emphasis added.) In the Office Action, the Examiner refers to Figure 7 of Fukuzaki, and finds that Fukuzaki's loop coils 31-1 to 31-4 correspond to the claimed "position resolving grid" and Fukuzaki's oscillator 33 and auxiliary antenna coil 51 correspond to the claimed "power transmission coil. 2010. While Fukuzaki describes a surface and cordless transducer system including a "position resolving grid" (Abstract), it does not disclose or suggest a "power transmission coil being a resonant power transmission coil and consisting of a plurality of overlapping coils," as recited in Claims 22 and 59. Specifically, Fukuzaki's "auxiliary antenna coil 51" is provided to "generate electromagnetic waves and to receive electromagnetic waves related to information identification" (Col. 12, lines 17-20), such as to receive information related to the pen pressure or the switch status (ON or OFF) of a transducer pen. (Col. 12, lines 33-38; Col. 12, line 46-Col. 13, line 5.) Nowhere in Fukuzaki is it suggested that the "auxiliary antenna coil 51" is a "resonant power transmission coil ... consisting of a plurality of overlapping coils." As such, Fukuzaki does not identically disclose the subject matter recited in Claims 22 and 59 and, therefore, the rejection of the claims based on Fukuzaki under 35 USC 102(b) is improper.

Applicants' attorney thanks the Examiner for her time and consideration in conducting a telephone interview on March 4, 2010, regarding the Office Action. During the telephone interview, following the discussion of Fukuzaki as outlined above, the Examiner identified two (2) additional prior art references (not of record), U.S. Patent No. 6,556,190 (hereinafter "the '190 patent") and U.S. patent No. 6,476, 799 (hereinafter "the '799 patent"). Specifically, regarding the '799 patent, the Examiner referred to coils 20 in Fig. 1 thereof, as corresponding to the claimed "power transmission coil being a resonant power transmission coil and consisting of a plurality of overlapping coils power transmission coil." Applicants respectfully point out, however, that the coils 20 are not "a resonant power transmission coil" nor are they "comprising a plurality of overlapping coils" as explicitly recited in Claims 22 and 59. Therefore, the '799 patent (not of record) cannot cure the deficiency of Fukuzaki.

Regarding the '190 patent, Fig. 12 shows a plurality of overlapping coils 67 that are used as a position resolving grid (Col. 9, lines 29-58). Applicants have thoroughly reviewed the '190 patent and note that, again, the overlapping coils 67 are not "a resonant power transmission coil" as explicitly required in Claims 22 and 59. Therefore, the '190 patent (not of record) does not cure the deficiency of Fukuzaki, either.

Applicants note that all of Fukuzaki, the '799 patent, and the '190 patent describes a transducer stylus (pen) including a *resonant* circuit (i.e., a tuned circuit). (See, Fukuzaki, Claim 6; the '799 patent, Claim 13; and the '190 patent, Col. 10, lines 1-8.) However, none of these references teaches or suggests the use of a "surface [that is distinct from the transducer stylus (pen)] including a power transmission coil [that is] a *resonant* power transmission coil and consisting of a plurality of overlapping coils." (Emphasis added.)

As described throughout the present application, the use of a resonant power transmission coil in the present invention, as explicitly recited in Claims 22 and 59, provides substantial advantages over the use of a non-resonant coil. Specifically, the application describes as below:

The surface of the present invention contains *a series of overlapping transmit resonant inductive based coils or loops*, that when enabled by *self-resonance*, or driven by an external AC signal source, individually or in a pattern, creates a radiating electromagnetic field that powers or charges the transducer(s) in a

manner having *increased voltage amplitude over non-resonant methods.... Less power is required in the surface because of the properties of current multiplication associated with resonance.*

(Application, page 5, lines 6-16, emphasis added.)

The resonant characteristics of the transmit loops on the surface convert the waveform to a substantially sinusoidal form.

(Application, page 5, line 32-page 6, line 1, emphasis added.)

The operation and efficiency of the resonant surface coils compared to non-resonant circuits are substantial. In the case of the resonant circuit, energy is transferred back and forth between an inductor (in this case a coil loop or loops on the surface) and a capacitor(s). Once resonance is achieved, it is only necessary to provide additional current to account for losses in the circuit caused by the equivalent series resistance in the circuit. The amount of current multiplication can be defined by the Q or quality quotient of the circuit that is defined as the ratio of the impedance of the inductance divided by the value of the equivalent series resistance (XL/R_s).

(Application, page 6, line 28-page 7, line 4, emphasis added.)

The higher the Q the higher the resonant current that can also be called current multiplication – the multiplication of the current beyond what the current would be if there were no resonance. It is important to understand that the current is increased and the resulting magnetic field is increased a proportional amount by the use of resonance.

(Application, page 7, lines 10-16, emphasis added.)

The transmit signal is fed to *tuned powering loop drivers 11* [FIG. 8] that directs the signal to a specific output or address. Under the control of the microcontroller, the signal is fed to one of the selected transmit grid loops 24. The *tuned powering loop drivers 11* have an on/off input that is gated by the microcontroller to modulate or turn the selected grid signal on or off.

(Application, page 21, lines 9-13, emphasis added.)

As described in the present application and as quoted above, the use of a resonant power transmission coil consisting of a plurality of overlapping coils, as explicitly recited in Claims 22 and 59, is highly advantageous over the use of a non-resonant coil. Applicants further respectfully submit that none of Fukuzaki, the '799 patent, and the '190 patent teaches or

suggests the use of a “surface including a power transmission coil [that is] a resonant power transmission coil and consisting of a plurality of overlapping coils.” Therefore, Claims 22 and 59 are believed to be allowable over any of these references, either alone or in any combination.

Claims 51-58 depend from Claim 22 and Claims 60-67 depend from Claim 59. Therefore, these dependent claims are also believed to be allowable for at least the same reasons why Claims 22 and 59 are allowable.

All of the claims remaining in the application (Claims 22 and 51-67) are clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,
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